

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An image formation apparatus having a print head with an ink discharge face where ink discharge orifices are provided, whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium, said image formation apparatus comprising:

a cleaning member cylindrically formed of a material having elasticity;

moving means for ~~moving both the~~ effecting relative motion between a peripheral face of said cleaning member and the ink discharge face of said print head ~~relative one to another~~, with both in contact one with another; and

driving control means for controlling the driving of said moving means;

wherein, each time a predetermined number of sheets of said recording medium have images formed thereupon following starting of the operations for forming images, the image formation operations are temporarily interrupted, and said moving means are driven under the control of said driving control means, and the peripheral face of said cleaning member is moved over the surface of said ink discharge face while in contact therewith, thereby suctioning the ink within said ink discharge orifices.

2. (Original) An image formation apparatus according to claim 1, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein opening and closing of said cap member is performed by

Appln. No. 10/618,552

Amdt. Dated April 22, 2005

Reply to Office Action of November 5, 2005

driving said moving means such that the peripheral face of said cleaning member is relatively moved over the surface of said ink discharge face while in contact therewith in conjunction with the opening action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

3. (Original) An image formation apparatus according to claim 1, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein opening and closing of said cap member is performed by driving said moving means such that the peripheral face of said cleaning member is relatively moved over the surface of said ink discharge face while in contact therewith in conjunction with the closing action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

4. (Currently Amended) An image formation apparatus having a print head with an ink discharge face where ink discharge orifices are provided, whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium, said image formation apparatus comprising:

a cleaning member cylindrically formed of a material having elasticity;

moving means for moving both the effecting relative motion between a peripheral face of said cleaning member and the ink discharge face of said print head ~~relative one to another~~, with both in contact one with another; driving control means for controlling the

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

driving of said moving means; and

discharge control means for controlling discharge operations of ink from ink discharge orifices on said ink discharge face;

wherein, each time a predetermined number of sheets of said recording medium have images formed thereupon following starting of the operations for forming images, the image formation operations are temporarily interrupted, and said moving means are driven under the control of said driving control means, and the peripheral face of said cleaning member is moved over the surface of said ink discharge face while in contact therewith, thereby suctioning the ink within said ink discharge orifices, and further wherein, following said cleaning member moving over said ink discharge face, under control of said discharge control means, preliminary discharge of ink from said ink discharge orifices is performed.

5. (Original) An image formation apparatus according to claim 4, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein opening and closing of said cap member is performed by driving said moving means such that the peripheral face of said cleaning member is relatively moved over the surface of said ink discharge face while in contact therewith in conjunction with the opening action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

Appln. No. 10/618,552

Amdt. Dated April 22, 2005

Reply to Office Action of November 5, 2005

6. (Original) An image formation apparatus according to claim 4, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein opening and closing of said cap member is performed by driving said moving means such that the peripheral face of said cleaning member is relatively moved over the surface of said ink discharge face while in contact therewith in conjunction with the closing action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

7. (Currently Amended) An image formation apparatus having a print head with an ink discharge face where ink discharge orifices are provided, whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium, said image formation apparatus comprising:

a cleaning member cylindrically formed of a material having elasticity;

moving means for ~~moving both the~~ effecting relative motion between a peripheral face of said cleaning member and the ink discharge face of said print head ~~relative one to another~~, with both in contact one with another;

driving control means for controlling the driving of said moving means; and

discharge control means for controlling discharge operations of ink from ink discharge orifices on said ink discharge face;

whercin, each time a predetermined number of sheets of said recording medium have images formed thereupon following starting of the operations for forming images, the image

Appln. No. 10/618,552

Amdt. Dated April 22, 2005

Reply to Office Action of November 5, 2005

formation operations are temporarily interrupted, and discharge operations of ink from ink discharge orifices are performed under control of said discharge control means, whereby preliminary discharge of ink from said ink discharge orifices is performed.

8. (Currently Amended) An image formation apparatus according to claim 7, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein opening and closing of said cap member is performed by driving said moving means such that relative motion is effected between said cleaning member and said print head ~~are relatively moved~~ in conjunction with the opening action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.
9. (Currently Amended) An image formation apparatus according to claim 7, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein opening and closing of said cap member is performed by driving said moving means such that of relative motion is effected between said cleaning member and said print head ~~are relatively moved~~ in conjunction with the closing action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.
10. (Currently Amended) An image formation apparatus having a print head with an ink discharge face where rows of ink discharge orifices for each of a plurality of colors are

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Rcply to Office Action of November 5, 2005

provided, whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium, said image formation apparatus comprising:

a cleaning member cylindrically formed of a material having elasticity;

a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head;

cap opening/closing means for opening and closing said cap member, so that relative motion is effected between a the peripheral face of said cleaning member and the ink discharge face of said print head ~~are moved relative one to another~~ in a direction orthogonal to the rows of ink discharge orifices for each color, with both in contact one with another, in conjunction with the opening action of said cap member;

driving control means for controlling the driving of said cap opening/closing means;
and

discharge control means for controlling discharge operations of ink from ink discharge orifices on said ink discharge face;

wherein, each time a predetermined number of sheets of said recording medium have images formed thereupon following starting of the operations for forming images, the image formation operations are temporarily interrupted, and said cap opening/closing means are driven under the control of said driving control means to temporarily close said cap member and then reopen, and the peripheral face of said cleaning member is moved over the surface of said ink discharge face while in contact therewith, thereby suctioning the ink within said ink discharge orifices, and further wherein, following said cleaning member moving over said

Appln. No. 10/618,552

Amdt. Dated April 22, 2005

Reply to Office Action of November 5, 2005

ink discharge face, under control of said discharge control means, preliminary discharge of ink from said ink discharge orifices is performed in the order of the rows of ink discharge orifices of each color on said ink discharge face which said cleaning member has passed over.

11. (Currently Amended) An image formation apparatus having a print head with an ink discharge face where rows of ink discharge orifices for each of a plurality of colors are provided, whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium, said image formation apparatus comprising:

a cleaning member cylindrically formed of a material having elasticity;

a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head;

cap opening/closing means for opening and closing said cap member, so that relative motion is effected between a the peripheral face of said cleaning member and the ink discharge face of said print head ~~are moved relative one to another~~ in a direction orthogonal to the rows of ink discharge orifices for each color, with both in contact one with another, in conjunction with the closing action of said cap member;

driving control means for controlling the driving of said cap opening/closing means;
and

discharge control means for controlling discharge operations of ink from ink discharge orifices on said ink discharge face;

wherein, each time a predetermined number of sheets of said recording medium have

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

images formed thereupon following starting of the operations for forming images, the image formation operations are temporarily interrupted, and said cap opening/closing means are driven under the control of said driving control means to temporarily close said cap member and then reopen, and the peripheral face of said cleaning member is moved over the surface of said ink discharge face while in contact therewith, thereby suctioning the ink within said ink discharge orifices, and further wherein, following said cleaning member moving over said ink discharge face, under control of said discharge control means, preliminary discharge of ink from said ink discharge orifices is performed in the order of the rows of ink discharge orifices of each color on said ink discharge face which said cleaning member has passed over.

12. (Currently Amended) An image formation apparatus having a print head with an ink discharge face where ink discharge orifices are provided, whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium, said image formation apparatus comprising:

a cleaning member cylindrically formed of a material having elasticity;

moving means for ~~moving both the~~ effecting relative motion between a peripheral face of said cleaning member and the ink discharge face of said print head ~~relative one to another,~~ with both in contact one with another; and

driving control means for controlling the driving of said moving means;

wherein, each time a predetermined amount of time elapses following starting of the operations for forming images on said recording medium, the image formation operations are

Appln. No. 10/618,552

Amdt. Dated April 22, 2005

Reply to Office Action of November 5, 2005

temporarily interrupted, and said moving means are driven under the control of said driving control means, and the peripheral face of said cleaning member is moved over the surface of said ink discharge face while in contact therewith, thereby suctioning the ink within said ink discharge orifices.

13. (Original) An image formation apparatus according to claim 12, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein opening and closing of said cap member is performed by driving said moving means such that the peripheral face of said cleaning member is relatively moved over the surface of said ink discharge face of said print head while in contact therewith in conjunction with the opening action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

14. (Original) An image formation apparatus according to claim 12, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein opening and closing of said cap member is performed by driving said moving means such that the peripheral face of said cleaning member is relatively moved over the surface of said ink discharge face of said print head while in contact therewith in conjunction with the closing action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

Appln. No. 10/618,552

Amdt. Dated April 22, 2005

Reply to Office Action of November 5, 2005

15. (Currently Amended) An image formation apparatus having a print head with an ink discharge face where ink discharge orifices are provided, whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium, said image formation apparatus comprising:

a cleaning member cylindrically formed of a material having elasticity;

moving means for ~~moving both the~~ effecting relative motion between a peripheral face of said cleaning member and the ink discharge face of said print head ~~relative one to another~~, with both in contact one with another;

driving control means for controlling the driving of said moving means; and

discharge control means for controlling discharge operations of ink from ink discharge orifices on said ink discharge face;

wherein, each time a predetermined amount of time elapses following starting of the operations for forming images on said recording medium, the image formation operations are temporarily interrupted, and said moving means are driven under the control of said driving control means, and the peripheral face of said cleaning member is moved over the surface of said ink discharge face while in contact therewith, thereby suctioning the ink within said ink discharge orifices, and further wherein, following said cleaning member moving over said ink discharge face, under control of said discharge control means, preliminary discharge of ink from said ink discharge orifices is performed.

Appln. No. 10/618,552

Amdt. Dated April 22, 2005

Reply to Office Action of November 5, 2005

16. (Original) An image formation apparatus according to claim 15, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein opening and closing of said cap member is performed by driving said moving means such that the peripheral face of said cleaning member is relatively moved over the surface of said ink discharge face while in contact therewith in conjunction with the opening action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

17. (Original) An image formation apparatus according to claim 15, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein opening and closing of said cap member is performed by driving said moving means such that the peripheral face of said cleaning member is relatively moved over the surface of said ink discharge face while in contact therewith in conjunction with the closing action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

18. (Currently Amended) An image formation apparatus having a print head with an ink discharge face where ink discharge orifices are provided, whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium, said image formation apparatus comprising:

a cleaning member cylindrically formed of a material having elasticity;

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

moving means for ~~moving both the~~ effecting relative motion between a peripheral face of said cleaning member and the ink discharge face of said print head ~~relative one to another~~, with both in contact one with another;

driving control means for controlling the driving of said moving means; and

discharge control means for controlling discharge operations of ink from ink discharge orifices on said ink discharge face;

wherein, each time a predetermined amount of time elapses following starting of the operations for forming images on said recording medium, the image formation operations are temporarily interrupted, and discharge operations of ink from ink discharge orifices are performed under control of said discharge control means, whereby preliminary discharge of ink from said ink discharge orifices is performed.

19. (Currently Amended) An image formation apparatus according to claim 18, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein opening and closing of said cap member is performed by driving said moving means such that relative motion is effected between said cleaning member and said print head ~~are relatively moved~~ in conjunction with the opening action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

Appln. No. 10/618,552

Amdt. Dated April 22, 2005

Reply to Office Action of November 5, 2005

20. (Currently Amended) An image formation apparatus according to claim 18, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein opening and closing of said cap member is performed by driving said moving means such that relative motion is effected between said cleaning member and said print head ~~are relatively moved~~ in conjunction with the closing action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

21. (Currently Amended) An image formation apparatus having a print head with an ink discharge face where rows of ink discharge orifices for each of a plurality of colors are provided, whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium, said image formation apparatus comprising:

a cleaning member cylindrically formed of a material having elasticity;

a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head;

cap opening/closing means for opening and closing said cap member, so that relative motion is effected between a the peripheral face of said cleaning member and the ink discharge face of said print head ~~are moved relative one to another~~ in a direction orthogonal to the rows of ink discharge orifices for each color, with both in contact one with another, in conjunction with the opening action of said cap member;

driving control means for controlling the driving of said cap opening/closing means;

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

and

discharge control means for controlling discharge operations of ink from ink discharge orifices on said ink discharge face;

wherein, each time a predetermined amount of time elapses following starting of the operations for forming images, the image formation operations are temporarily interrupted, and said cap opening/closing means are driven under the control of said driving control means to temporarily close said cap member and then reopen, and the peripheral face of said cleaning member is moved over the surface of said ink discharge face while in contact therewith, thereby suctioning the ink within said ink discharge orifices, and further wherein, following said cleaning member moving over said ink discharge face, under control of said discharge control means, preliminary discharge of ink from said ink discharge orifices is performed in the order of the rows of ink discharge orifices of each color on said ink discharge face which said cleaning member has passed over.

22. (Currently Amended) An image formation apparatus having a print head with an ink discharge face where rows of ink discharge orifices for each of a plurality of colors are provided, whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium, said image formation apparatus comprising:

a cleaning member cylindrically formed of a material having elasticity;

a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head;

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Rcply to Office Action of November 5, 2005

cap opening/closing means for opening and closing said cap member, so that relative motion is effected between a the peripheral face of said cleaning member and the ink discharge face of said print head ~~are moved relative one to another~~ in a direction orthogonal to the rows of ink discharge orifices for each color, with both in contact one with another, in conjunction with the closing action of said cap member;

driving control means for controlling the driving of said cap opening/closing means;
and

discharge control means for controlling discharge operations of ink from ink discharge orifices on said ink discharge face;

wherein, each time a predetermined amount of time elapses following starting of the operations for forming images on said recording medium, the image formation operations are temporarily interrupted, and said cap opening/closing means are driven under the control of said driving control means to temporarily close said cap member and then reopen, and the peripheral face of said cleaning member is moved over the surface of said ink discharge face while in contact therewith, thereby suctioning the ink within said ink discharge orifices, and further wherein, following said cleaning member moving over said ink discharge face, under control of said discharge control means, preliminary discharge of ink from said ink discharge orifices is performed in the order of the rows of ink discharge orifices of each color on said ink discharge face which said cleaning member has passed over.

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

23. (Original) An image formation apparatus according to any of claims 1 through 22, wherein said cap member is closed following said image formation operations.
24. (Original) An image formation apparatus according to any of claims 5, 6, 8, 9, 10, 11, 16, 17, 19, 20, 21, and 22, wherein an ink receptacle, for receiving ink discharged from said ink discharge orifices by preliminary discharging, is provided on the inner side of said cap member.
25. (Currently Amended) A control method for an image formation apparatus comprising a print head having an ink discharge face where ink discharge orifices are provided, a cleaning member cylindrically formed of a material having elasticity, moving means for ~~moving both the~~ effecting relative motion between a peripheral face of said cleaning member and the ink discharge face of said print head ~~relative one to another~~, with both in contact one with another, and driving control means for controlling the driving of said moving means, whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium, ~~wherein the control method comprising the steps of~~, each time a predetermined number of sheets of said recording medium have images formed thereupon following starting of the operations for forming images, temporarily interrupting the image formation operations ~~are temporarily interrupted, and, driving said moving means are driven under the control of~~

Appln. No. 10/618,552

Amdt. Dated April 22, 2005

Reply to Office Action of November 5, 2005

said driving control means, and moving the peripheral face of said cleaning member ~~is moved~~ over the surface of said ink discharge face while in contact therewith, thereby suctioning the ink within said ink discharge orifices.

26. (Currently Amended) A control method for an image formation apparatus according to claim 25, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein said method further comprising performing opening and closing of said cap member ~~is performed by driving said~~ moving means such that the peripheral face of said cleaning member is relatively moved over the surface of said ink discharge face while in contact therewith in conjunction with the opening action of said cap member, ~~and~~ wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

27. (Currently Amended) A control method for an image formation apparatus according to claim 25, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein said method further comprising performing opening and closing of said cap member ~~is performed by driving said~~ moving means such that the peripheral face of said cleaning member is relatively moved over the surface of said ink discharge face while in contact therewith in conjunction with the closing action of said cap member, ~~and~~ wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

Appln. No. 10/618,552

Amdt. Dated April 22, 2005

Reply to Office Action of November 5, 2005

28. (Currently Amended) A control method for an image formation apparatus comprising
- a print head having an ink discharge face where ink discharge orifices are provided,
- a cleaning member cylindrically formed of a material having elasticity,
- moving means for ~~moving both the~~ effecting relative motion between a peripheral
- face of said cleaning member and the ink discharge face of said print head ~~relative one to~~
- ~~another~~, with both in contact one with another,
- driving control means for controlling the driving of said moving means, and
- discharge control means for controlling discharge operations of ink from ink discharge
- orifices on said ink discharge face,
- whereby ink is discharged from said ink discharge orifices so as to form an image on a
- recording medium,
- wherein the control method comprising the steps of, each time a predetermined
- number of sheets of said recording medium have images formed thereupon following starting
- of the operations for forming images, temporarily interrupting the image formation operations
- ~~are temporarily interrupted, and, driving~~ said moving means ~~are driven~~ under the control of
- said driving control means, and moving the peripheral face of said cleaning member is moved
- over the surface of said ink discharge face while in contact therewith, thereby suctioning the
- ink within said ink discharge orifices, and further wherein, following moving said cleaning
- member moving over said ink discharge face, under control of said discharge control means,
- performing preliminary discharge of ink from said ink discharge orifices ~~is performed~~.

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

29. (Currently Amended) A control method for an image formation apparatus according to claim 28, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein said method further comprising performing opening and closing of said cap member is performed by driving said moving means such that the peripheral face of said cleaning member is relatively moved over the surface of said ink discharge face of said print head while in contact therewith in conjunction with the opening action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

30. (Currently Amended) A control method for an image formation apparatus according to claim 28, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein said method further comprising performing opening and closing of said cap member is performed by driving said moving means such that the peripheral face of said cleaning member is relatively moved over the surface of said ink discharge face of said print head while in contact therewith in conjunction with the closing action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

31. (Currently Amended) A control method for an image formation apparatus comprising
- a print head having an ink discharge face where ink discharge orifices are provided,
- a cleaning member cylindrically formed of a material having elasticity,
- moving means for ~~moving both the~~ effecting relative motion between a peripheral face of said cleaning member and the ink discharge face of said print head ~~relative one to another~~, with both in contact one with another,
- driving control means for controlling the driving of said moving means, and
- discharge control means for controlling discharge operations of ink from ink discharge orifices on said ink discharge face,
- whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium,
- wherein the control method comprising the steps of, each time a predetermined number of sheets of said recording medium have images formed thereupon following starting of the operations for forming images, temporarily interrupting the image formation operations ~~are temporarily interrupted, and, performing~~ said discharge operations of ink from ink discharge orifices ~~are performed~~ under control of said discharge control means, whereby and effecting control is ~~effected such that to perform~~ preliminary discharge of ink from said ink discharge orifices ~~is performed~~.

32. (Currently Amended) A control method for an image formation apparatus according to claim 31, further comprising a cap member for storing said cleaning member therein and

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

also protecting said ink discharge face of said print head, wherein said method further comprising performing opening and closing of said cap member is performed by driving said moving means such that relative motion is effected between said cleaning member and said print head ~~are relatively moved~~ in conjunction with the opening action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

33. (Currently Amended) A control method for an image formation apparatus according to claim 31, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein said method further comprising performing opening and closing of said cap member is performed by driving said moving means such that relative motion is effected between said cleaning member and said print head ~~are relatively moved~~ in conjunction with the closing action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

34. (Currently Amended) A control method for an image formation apparatus comprising
a print head with an ink discharge face where rows of ink discharge orifices for each of a plurality of colors are provided,
a cleaning member cylindrically formed of a material having elasticity,
a cap member for storing said cleaning member therein and also protecting said ink

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

discharge face of said print head,

cap opening/closing means for opening and closing said cap member, so that relative motion is effected between a the peripheral face of said cleaning member and the ink discharge face of said print head ~~are moved relative one to another~~ in a direction orthogonal to the rows of ink discharge orifices for each color, with both in contact one with another, in conjunction with the opening action of said cap member,

driving control means for controlling the driving of said cap opening/closing means, and

discharge control means for controlling discharge operations of ink from ink discharge orifices on said ink discharge face,

whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium,

wherein the control method comprising the steps of, each time a predetermined number of sheets of said recording medium have images formed thereupon following starting of the operations for forming images, temporarily interrupting the image formation operations ~~are temporarily interrupted, and, driving~~ said cap opening/closing means ~~are driven~~ under the control of said driving control means to temporarily close said cap member and then reopen, and moving the peripheral face of said cleaning member ~~is moved~~ over the surface of said ink discharge face while in contact therewith, thereby suctioning the ink within said ink discharge orifices, and further wherein, following moving said cleaning member ~~moving~~ over said ink discharge face, under control of said discharge control means, performing preliminary

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

discharge of ink from said ink discharge orifices ~~is performed~~ in the order of the rows of ink discharge orifices of each color on said ink discharge face which said cleaning member has passed over.

35. (Currently Amended) A control method for an image formation apparatus comprising a print head with an ink discharge face where rows of ink discharge orifices for each of a plurality of colors are provided,

a cleaning member cylindrically formed of a material having elasticity,

a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head,

cap opening/closing means for opening and closing said cap member, so that relative motion is effected between a the peripheral face of said cleaning member and the ink discharge face of said print head ~~are moved relative one to another~~ in a direction orthogonal to the rows of ink discharge orifices for each color, with both in contact one with another, in conjunction with the closing action of said cap member,

driving control means for controlling the driving of said cap opening/closing means, and

discharge control means for controlling discharge operations of ink from ink discharge orifices on said ink discharge face,

whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium,

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

wherein the control method comprising the steps of, each time a predetermined number of sheets of said recording medium have images formed thereupon following starting of the operations for forming images, temporarily interrupting the image formation operations ~~are temporarily interrupted, and, driving~~ said cap opening/closing means ~~are driven~~ under the control of said driving control means to temporarily close said cap member and then reopen, and moving the peripheral face of said cleaning member ~~is moved~~ over the surface of said ink discharge face while in contact therewith, thereby suctioning the ink within said ink discharge orifices, and further wherein, following moving said cleaning member ~~moving~~ over said ink discharge face, under control of said discharge control means, performing preliminary discharge of ink from said ink discharge orifices ~~is performed~~ in the order of the rows of ink discharge orifices of each color on said ink discharge face which said cleaning member has passed over.

36. (Currently Amended) A control method for an image formation apparatus comprising a print head having an ink discharge face where ink discharge orifices are provided, a cleaning member cylindrically formed of a material having elasticity,
- moving means for moving both the effecting relative motion between a peripheral face of said cleaning member and the ink discharge face of said print head relative one to another, with both in contact one with another, and
- driving control means for controlling the driving of said moving means,
- whereby ink is discharged from said ink discharge orifices so as to form an image on a

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

recording medium,

wherein the control method comprising the steps of, each time a predetermined amount of time elapses following starting of the operations for forming images on said recording medium, temporarily interrupting the image formation operations ~~are temporarily interrupted, and, driving~~ said moving means ~~are driven~~ under the control of said driving control means, and moving the peripheral face of said cleaning member ~~is moved~~ over the surface of said ink discharge face while in contact therewith, thereby suctioning the ink within said ink discharge orifices.

37. (Currently Amended) A control method for an image formation apparatus according to claim 36, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein said method further comprising performing opening and closing of said cap member ~~is performed by~~ driving said moving means such that the peripheral face of said cleaning member is relatively moved over the surface of said ink discharge face of said print head while in contact therewith in conjunction with the opening action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

38. (Currently Amended) A control method for an image formation apparatus according to claim 36, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein said method further

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

comprising performing opening and closing of said cap member ~~is performed~~ by driving said moving means such that the peripheral face of said cleaning member is relatively moved over the surface of said ink discharge face of said print head while in contact therewith in conjunction with the closing action of said cap member, ~~and~~ wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

39. (Currently Amended) A control method for an image formation apparatus comprising a print head with an ink discharge face where ink discharge orifices are provided, a cleaning member cylindrically formed of a material having elasticity, moving means for ~~moving both the~~ effecting relative motion between a peripheral face of said cleaning member and the ink discharge face of said print head ~~relative one to another~~, with both in contact one with another, driving control means for controlling the driving of said moving means, and discharge control means for controlling discharge operations of ink from ink discharge orifices on said ink discharge face, whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium; wherein the control method comprising the steps of, each time a predetermined amount of time elapses following starting of the operations for forming images on said recording medium, temporarily interrupting the image formation operations ~~are temporarily~~

Appln. No. 10/618,552

Amdt. Dated April 22, 2005

Reply to Office Action of November 5, 2005

~~interrupted, and, driving~~ said moving means ~~are driven~~ under the control of said driving control means, and moving the peripheral face of said cleaning member ~~is moved~~ over the surface of said ink discharge face while in contact therewith, thereby suctioning the ink within said ink discharge orifices, and further wherein, following moving said cleaning member ~~moving~~ over said ink discharge face, under control of said discharge control means, performing preliminary discharge of ink from said ink discharge orifices ~~is performed~~.

40. (Currently Amended) A control method for an image formation apparatus according to claim 39, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein said method further comprising performing opening and closing of said cap member ~~is performed by driving said moving means~~ such that the peripheral face of said cleaning member is relatively moved over the surface of said ink discharge face of said print head while in contact therewith in conjunction with the opening action of said cap member, ~~and~~ wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

41. (Currently Amended) A control method for an image formation apparatus according to claim 39, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein said method further comprising performing opening and closing of said cap member ~~is performed by driving said moving means~~ such that the peripheral face of said cleaning member is relatively moved over

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

the surface of said ink discharge face of said print head while in contact therewith in conjunction with the closing action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

42. (Currently Amended) A control method for an image formation apparatus comprising a print head with an ink discharge face where ink discharge orifices are provided, a cleaning member cylindrically formed of a material having elasticity, moving means for ~~moving both the~~ effecting relative motion between a peripheral face of said cleaning member and the ink discharge face of said print head ~~relative one to another~~, with both in contact one with another, driving control means for controlling the driving of said moving means, and discharge control means for controlling discharge operations of ink from ink discharge orifices on said ink discharge face, whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium;

~~wherein the control method comprising the steps of~~, each time a predetermined amount of time elapses following starting of the operations for forming images on said recording medium, temporarily interrupting the image formation operations ~~are temporarily interrupted, and, performing~~ discharge operations of ink from ink discharge orifices ~~are performed~~ under control of said discharge control means, whereby preliminary discharge of

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

ink from said ink discharge orifices is performed.

43. (Currently Amended) A control method for an image formation apparatus according to claim 42, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein said method further comprising performing opening and closing of said cap member is performed by driving said moving means such that relative motion is effected between said cleaning member and said print head ~~are relatively moved~~ in conjunction with the opening action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

44. (Currently Amended) A control method for an image formation apparatus according to claim 42, further comprising a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head, wherein said method further comprising performing opening and closing of said cap member is performed by driving said moving means such that relative motion is effected between said cleaning member and said print head ~~are relatively moved~~ in conjunction with the closing action of said cap member, and wherein said cap member is temporarily closed and then opened again during interruption of said image formation operations.

45. (Currently Amended) A control method for an image formation apparatus comprising
a print head with an ink discharge face where rows of ink discharge orifices for each

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

of a plurality of colors are provided,

a cleaning member cylindrically formed of a material having elasticity,

a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head,

cap opening/closing means for opening and closing said cap member, so that relative motion is effected between a peripheral face of said cleaning member and the ink discharge face of said print head ~~are moved relative one to another~~ in a direction orthogonal to the rows of ink discharge orifices for each color, with both in contact one with another, in conjunction with the opening action of said cap member,

driving control means for controlling the driving of said cap opening/closing means,
and

discharge control means for controlling discharge operations of ink from ink discharge orifices on said ink discharge face,

whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium;

wherein the control method comprising the steps of, each time a predetermined amount of time elapses following starting of the operations for forming images, temporarily interrupting the image formation operations ~~are temporarily interrupted, and, driving~~ said cap opening/closing means ~~are driven~~ under the control of said driving control means to temporarily close said cap member and then reopen, and moving the peripheral face of said cleaning member ~~is moved~~ over the surface of said ink discharge face while in contact

Appln. No. 10/618,552

Amtdt. Dated April 22, 2005

Reply to Office Action of November 5, 2005

therewith, thereby suctioning the ink within said ink discharge orifices, and further wherein, following moving said cleaning member ~~moving~~ over said ink discharge face, under control of said discharge control means, performing preliminary discharge of ink from said ink discharge orifices ~~is performed~~ in the order of the rows of ink discharge orifices of each color on said ink discharge face which said cleaning member has passed over.

46. (Currently Amended) A control method for an image formation apparatus comprising
a print head with an ink discharge face where rows of ink discharge orifices for each of a plurality of colors are provided,

a cleaning member cylindrically formed of a material having elasticity,

a cap member for storing said cleaning member therein and also protecting said ink discharge face of said print head,

cap opening/closing means for opening and closing said cap member, so that relative motion is effected between a the peripheral face of said cleaning member and the ink discharge face of said print head ~~are moved relative one to another~~ in a direction orthogonal to the rows of ink discharge orifices for each color, with both in contact one with another, in conjunction with the closing action of said cap member,

driving control means for controlling the driving of said cap opening/closing means,
and

discharge control means for controlling discharge operations of ink from ink discharge orifices on said ink discharge face,

Appln. No. 10/618,552
Amdt. Dated April 22, 2005
Reply to Office Action of November 5, 2005

whereby ink is discharged from said ink discharge orifices so as to form an image on a recording medium;

wherein the control method comprising the steps of, each time a predetermined amount of time elapses following starting of the operations for forming images on said recording medium, temporarily interrupting the image formation operations ~~are temporarily interrupted~~, and, driving said cap opening/closing means ~~are driven~~ under the control of said driving control means to temporarily close said cap member and then reopen, and moving the peripheral face of said cleaning member ~~is moved~~ over the surface of said ink discharge face while in contact therewith, thereby suctioning the ink within said ink discharge orifices, and further wherein, following moving said cleaning member ~~moving~~ over said ink discharge face, under control of said discharge control means, performing preliminary discharge of ink from said ink discharge orifices ~~is performed~~ in the order of the rows of ink discharge orifices of each color on said ink discharge face which said cleaning member has passed over.

47. (Currently Amended) A control method for an image formation apparatus according to any of claims 25 through 46, wherein said method further comprising performing closing said cap member ~~is closed~~ following said image formation operations.